NARRATIVE REPORT

REELFOOT AND LAKE ISOM REFUGES

JANUARY - DECEMBER - 1967

REFUGE PERSONNEL

JOHN L. DeLIME	REFUGE MANAGER
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REELFOOT AND LAKE ISOM NATIONAL WILDLIFE REFUGES

1967

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I. GENERAL

A. Weather Conditions

The year 1967 was a weather forecasters nightmare. The term normal weather could not be applied to any month of the year. Temperatures averaged below normal 8 months out of twelve. Absolute extremes for the year were 10 degrees on January 18 and February 25 and 97 degrees on May 27.

Precipitation trends followed the same pattern. Either too much or too little. May and June were very wet. The combination of cool weather and excessive rainfall were very detrimental to farming interests. The area cotton acreage harvested was 90% below normal. Most acreage was converted to soybeans.

Monthly temperature and precipitation statistics were as follows:

	Normal Temp. Avg.	1967 Temp. Avg.	Departure From Normal	Normal Precip. Avg.	1967 Precip. Avg.	Departure From Normal
January	38.3°	39.5°	+ 1.2°	5.14"	1.72"	- 3.42"
February	40.9	36.3	- 4.3	4.34	2.07	- 2.27
March	49.8	54.1	+ 4.3	5.06	4.56	- .50
April	59.9	64.1	+ 4.2	4.17	4.71	+ .54
May	69.0	66.9	- 2.1	4.59	10.59	+ 6.00
June	77.5	76.3	- 1.2	3.93	5.02	+ 1.09
July	80.6	74.2	- 6.4	3.90	3.84	- .06
August	79.8	73.6	- 5.2	2.80	2.36	- .44
September	72.4	67.6	- 4.7	3.34	2.63	- .71
October	61.3	60.6	- .7	3.08	3.65	+ .57
November	48.4	45.7	- 3.4	3.85	3.00	+ .85
December	40.1	41.7	+ 1.6	4.26	5.28	+ 1.02

B. Habitat Conditions.

1. Water

Reelfoot : The January 1 reading on the spillway gauge was 282.40 feet M.L.G. , .20 feet above the established pool stage. The Tennessee Game and Fish Commission did not request a late winter draw-down in 1967. Excessive rainfall necessitated frequent manupilation of spillway gates to maintain levels at or near pool until August when a steady recession began. High point reached was 282.90 feet on May 16 and a low of 281.48 feet on October 13. Pool stages were again exceeded in mid-December. All small control gates were open as the year closed.

The lake froze over from February 18 through February 28 and again on December 29.

Lake Isom : Our origional intention was to pull-down Lake Isom two feet in spring months in order to accomplish a much needed brush reclamation project. Wet weather negated the possibility. High gauge reading reached was 283.00 feet M.L.G. on May 15, 3 feet above pool. A natural recession in late fall dropped levels to 278.38 feet M.L.G. Subsequent rainfall refilled the lake during December.

2. Food and Cover

Realfoot: The supply of grain foods in refuge fields was exhausted by mid-January. Waste grain in privately owned harvested fields within a 20 mile radius has been in short supply throughout the wintering period. Refuge browse fields were, in most instances, undergrazed. Canada geese abandoned use of refuge browse early in February and spread their feeding activity over a wide area. Flocks were very selective in their choice of feeding sites. Heaviest use occurres in those fields planted in November and December following the soybean harvest. Tender growth no more than 2" high was preferred. Goose food demands led to depredation claims by several farmers.

After January 1 curley-leaved pondweed(Potamogeton crispus) was the only source of aquatic food present. As a result 90 to 95 percent of the Coot and aquatic feeding duck species populations were concentrated upon Upper Blue Basin and the various arms, basins and sloughs of the North Realfoot unit.Palatability of the exoticwas evidenced by the degree of utilization. On occasion sisable areas of water were covered with a layer of discarded plant stems.

Spring growth of curley-leaf declined drastically in the Upper Blue Basin area. Where in excess of 1,000 acres were blanketed in 1964, a mere 20 acres "surfaced" in 1967. In the Bayou-Du-Chein and Palastine Stumps sections, growth virtually disappeared. A spectacular increase was noted in the Donaldson Ditch section on the south end of the lake. The final die-back occurred about on schedule in June.

Initial fall growth which usually appears by October 1 was delayed until late November. Little progress was made thereafter. As late as January 1 growth was confined to a sparce stand of three to four inch vegetation on the lake bottom.

Biologist Cypert's stomach analysiss studies have definitely proven the value of curley-leaf as a waterfowl food. Waterfowl behavior in 1967 further emphasizes it's importances. During 1965 and 66 a major portion of the lake's total population of Coots, Widgeon, Gadwall and Ring- neck wereconcentrated over curley-leaf bedson Upper Blue Basin. In 1967 little use was recorded in this area.

Causative factors effecting the decline of curley-leaf are unknown. Theories advanced are: (1) the species cannot tolerate heavy waterfowl feeding pressure,(2) a typical exotic irruption followed the decline, (3) fairly stable water levels in late winter . All may have influence in the matter. Recorded lake levels during the first three months of the year varied little due to cancellation of plans for a draw-down. There are no logical reasons for the late start this fall. Both water and weather conditions were favorable.

Lake wide aquatic production was farbelow normal. In some areas good crops were produced. In others none. In sections effected by heavy silt and turbidity during May and June, aquatic failure was anticipated. Unfortunately the decline in production was not confined to these areas.

Sago pondweed (Potamogeton pectinatus) stands in the Forked Pond, Nix Field, Rat Island shore and willow bar sections were 50 percent below normal. For the second straight year turbid waters resulted in a complete kill in the Bussard Slough and Buck Basin areas.

American pondweed (Potamogeton americanus) followed the same downward trend.

Initial growth of watershield (Brasenia schreberi) showed some improvement in the Glory-Hole, Tri-Bar and Snaggy sections. Competition from rapidly spreading water smartweed(Polygonum amphibian) eventually resulted in a 20 percent crop loss. The latter species seldom produces seed and must be considered a pest plant. Density of stands and continued intrusion into other areas is a matter of concern.

Total production of coontail(Ceratophyllum demersum), fanwort (Cambomba spp.) and naiads (Naius quadalupensis) was 50 to 55 percent under an average crop. Reelfoot Creek's silt laden waters destroyed 90 percent of theexpected crop in the Snaggy, Glory-Hole, Palestine Stumps, Carey and Buck Basin sections. In the clearer waters of Brewers Bar, Black Jack Pocket, Burnt Woods and Allen Opening, a near average crop was present. Although water conditions were generally favorable, little or no growth occurred in Upper Blue Basin and about a half crop in the various arms and sloughs of Upper Reelfoot.

Acreage of (Polygonum hydropiperiodes) improved slighhly . Seed production was heavy.

Initial growth of water star-grass (Heteranthera dubia) indicated further intrusioninto previously uninfested waters. By mid-August 90 to 95 percent of the beds haddisappeared.

The acreage of mulefoot (Bushar advens) of sufficient density to limit the growth of more desireable aquatics is on a downward trend as a result of control operations.

Total elimination, if possible, is not desired since the species does have some food value and strip-bed effect across open water provides an excellent wave-breaker effect which is beneficial to other aquatics.

Appearance of american lotus (Nelumbo lutea) was again 10 - 15 days behind normalschedule. Control operations are meeting the need. In fact a gradual reduction in stand density is apparent.

White water lily (Nymphaea odorata) continues to spread, particularly in those areas subject to heavy siltation. Control measures have been ineffective.

Pickerel weed (Pontederia cordata) continues to spread in shallow water and bank or ditch edge situations. A second round of expiermental chemical treatment met with negative results.

Lake levels remaining near pool effectively curbed the spread of Giant cut-grass (Zizaniopsis miliacea).

Total production of duckweeds; Lemna minor, Wolfia columbianna and Spirodela polyrhiza; was slightly below average.

Soil moisture conditions prevented thecultivation of approximately 73 acres of low-lying lands on the North Reelfoot unit. Bumper crops of wild millrt, smartweed, rice cut-grass and dwarf spikerush were produced.

The supply of refuge grain foods was well below planned production as a result of weather conditions and predation. Enforced late planting dates, poor germination, floodinglosses, inability to apply fertilizer or cultivate, squirrel and crow damage to seedlings effected corn yields. A smut type disease cut milo yields in half. Swarms of blackbirds harvested the remaining production prior to November 10.

Acreage of browse was increased at this writing. The supply appears to exceed the need.

Lake Isom: Production of coontail, American pondweed, duckweeds and other aquatics equaledthe bumper crop of 1966. Smartweed, nut-grass and wild millet yields were benefitted by receeding water levels throughout the growing season.

Refuge corn and milo-maize yields were below average. As a result food supplies are below anticipated needs.

III. WILDLIFE

A. Migratory Birds.

Reelfoot: On January 1, an estimated 139,290 ducks were present, 17

percent above 1966 records and a 99 percent increase over 1965. Of this total 115,000 were mallards, up 20 percent from 1966 and 156 percent from 1965. The seasonal peak of 117,000 mallards was reached during the second week of the newyear. Populations held near this level until February 1 when a general exodus occurred.

At the outset, numbers of other duck species compared favorably with other years. The prolonged freeze-up in February forced the birds to move on. No significant concentrations were present thereafter.

Influenced by heavy mallard populations, total use days for the January-April period climbed 13 percent above 1966 records and 40 percent above those of 1965.

Wood duck nesting populations increased slightly with a corresponding rise in reproduction. In general, nesting activity was behind normal schedules. An unusual amount of very late nesting activity was noted. Of 16 nest boxes checked during the first week in July, 8 were occupied. A later inspection revealed that all were successful. Several very young broods were observed in late July. Weekly population records indicate a significant decrease in numbers of migrants.

The large number of semi-domesticated mallards around lake edges have made it impossible to designate a given nest as " tame " or "wild". Some are definately a mixture. Nest mortality is very high for either classification.

A few pairs of Hooded Merganser nested on the lake. We had thought the species might eventually use nesting boxes. There was no evidence of such use.

The first migrant Blue-Winged Teal were observed on August 9. Heaviest movement occurred between September 17 and 30th. Pintail appeared August 22. The first Gadwall and Widgeon arrived during the second week in September.

Fall and early winter waterfowl use of Reelfoot was very disappointing. There is little hope for improvement for the remainder of the wintering season. The drastic decline in refuge populations and total use can best be illustrated in the following tables.

In order to better compare census and use days figures as indicated in the above paragraph, the tabular illustrations appear on the following page.

	Peak 1967	Peak 1966	Peak 1965
Mallard	65,400	117,000	108,000
Black Duck	1,050	2,900	2,400
Gadwall	22,000	34,000	30,000
Widgeon	24,600	29,000	40,000
Pintail	2,900	5,200	6,900
Green-Winged Teal	4,400	2,750	5,800
Blue-Winged Teal	5,600	5,300	6,650
Shoveler	3,100	3,850	4,500
Wood Duck	4,850	5,800	6,125
Ring-Neck Duck	13,200	16,500	38,750

	Use Days 1967	Use Days 1966	Use Days 1965
Mallard	2,531,385	6,898,900	5,158,790
Black Duck	42,850	145,775	127,260
Gadwall	861,165	1,302,665	1,568,560
Widgeon	989,830	1,128,120	1,425,200
Pintail	111,750	221,265	222,425
Green-Winged Teal	175,225	135,275	205,450
Blue-Winged Teal	177,695	202,910	244,410
Shoveler	102,200	195,706	190,631
Wood Duck	380,970	540,500	517,125
Ring-Neck Duck	552,255	704,935	1,388,800

While peak populations were generally below those of the past two years, the decline in mallards was the most significant. The first wave of migrants arrived in mid-November. Numbers then declined steadily until the last week of the year when a slight influx was noted. Reliable reports indicate the bulk of the flight remained to the north. Agricultural interests report that some 35-45 percent of the corn acreage in the southern half of Illinois has not been harvested. Similar conditions exist in adjacent states. Warm weather and flood conditions in parts of these areas created ideal habitat conditions.

Duck behavior was very erratic and unpredictable. Available food supplies are probably responsible. Aquatics were in short supply and were soon depleted. Refuge agricultural lands cannot possibly meet the grain food demands of average populations. In the past, corn wasted in harvest operations throughout West Tennessee and Kentucky has supplemented refuge production.

The potential supply dwindles each year as corn acreage is diverted to soybeans. To counteract the effects of the European and Southwestern corn

borers, extension services recommend extremely early planting dates, an early harvest followed by immediate plowing as a control measure. As a result waste corn was a scarce item within a 25 mile radius of the refuge. It was soon consumed, forcing feeding birds into soybean fields where, according to refuge studies, waste soybeans averaged about 2.5 bushels per acre. The return of Gadwalls to field feeding was probably due to aquatic food shortages. Widgeon were observed on numerous occasions in both milo and soybean fields.

It is believed some refuge birds fed into southern Illinois. The traditional behavior pattern has been that feeding flights leave refuge rest areas in the late afternoon and, dependent upon distance flown, either return after dark or early the next morning. For a three week period few resting mallards could be found on the refuge during morning or early afternoon hours. Between 2:30 and 4:30 P.M. each day flights would come into the refuge from the north. Apparently the birds would leave before daylight the next morning.

An estimated 18,000 Canada Geese were presenton January 1, increasing to a seasonal peak of 24,500 during the third week of the month, holding above the 15,000 mark until March 1, with final depamture occurring in April, a very late date. Total use days were 75 percent above 1966 figures.

Use was largely confined to browse fields. Unfoutunalely, the birds decided to move into privately owned wheat fields about February 1. The movement was not triggered by a lack of refuge browse. In fact some fields were undergrazed. Several farmers complained about possible crop damage necessitating the expenditure of considerable time in " scaring" geese from these locations. At harvest time most of the individuals agreed that little or no damage had resulted.

The first fall migrant Canadas arrived in late October, about 15 days late. Following past trends, flock build-up progressed at a slow rate, reaching a peak of 12,200 in mid-December. Total use days were 12 percent under 1966 records.

Except for a few weather influenced flurries most goose activity has been confined to refuge areas. Use of corn was much lighter than that reported for the past two years. Warm and wet weather with shallow puddle-ponds present in browse fields was probably responsible for the change in feeding habits.

Only two Blue and three Snow Geese visited the area.

Peak American Coot populations fell from 51,000 in 1966 to 35,000 in 1967. Use days dropped 49 percent.

Pre-season interest in duck hunting was very high. Guides, motel and dock operators reported a sharp increase in advance reservations. The lake was well populated with hunters on opening day. Success waswell below area average and continued to declineon succeeding days. Hunter numbers dwindled accordingly. Mallards were very difficult to " work " throughout the season. Weatherwise, conditions were favorable for field hunting but competition and sky busting tactics held bags down.

Mourning Dove populations displayed a decided downward trend. Incidence of Avian trichomoniasis was again noted.

There was little change in numbers of American Egret and Great Blue Heron nests in the Otter Basin rookery. A few pairs of Little Blue and Yellow crowned Night Herons also nested there. Cattle Egrets were summer visitors in the general area.

Double-Crested Cormorants incidence continues on a downward trend. Pied-Billed Grebe peaks were unchanged.

Little change was noted in the incidence of nesting Little Green Heron, Least Bittern, Common and Purple Gallinule.

Lake Isom : For the January - April period, peak duck populations climbed from 33,100 in 1966 to 51,015 in 1967. Total use days were up 20 percent.

Following Reelfoot trends, September - December peaks dropped from 52,935 to 16,570. Use days were down 71 percent.

Late winter peaks climbed from 800 in 1966 to 1,300 in 1967. Use days were up 77 percent. While fall peaks dropped from 375 to 300 Canada Geese, early arrival and sustained use resulted in a 39 percent increase in use days. Thirteen Blue and Snow geese visited the area.

Wood duck nesting activity is still below desired levels.

B. Upland Game Birds

There is little possibility of reversing the downward trend in populations of Bob-White Quail. Elevation limits habitat quality on most refuge lands.

Incidence of wild turkey observations improved. We assume a few hens have drifted into the refuge from the origional stocking point on state managed lands. Unfortunately we are unable to confirm this theory since all birds seen were gobblers.

C. Big Game Animals

On Grassy Island sight incidence and other signs point to a slight

increase in the small herd of White-Tailed deer. The possibility of movement from the refuge exists since population gains are not consistent with breeding potentials. Habitat conditions have improved as a result of timber harvest operations but are still below the quality of nearby hill lands.

A few deer are appearing on the north unit. Numbers have declined at Lake Isom.

D. Fur Animals, Predators, Rodents and Other Animals

Raccoon: Hunter success on the annual 'coon hunt indicated a decline in the refuge population. Sign incidence and reduced predation on refuge crops support this conclusion. If numbers of participating hunters remain at present levels it appears the possibility of a recurrence of an overpopulated condition is remote. Breeding populations are adequate.

Mink: Little change can be reported. The wandering nature of this furbearer permits the removal of annual increment by trappers operating near refuge boundaries.

Muskrat: While a noticable increase has occurred, populations are not comensurate with reproduction potentials. Evidence of feeding activity is quite evident in cut-grass stands. Such activity improves waterfowl habitat.

Beaver: On the increase lake-wide but particularly on refuge areas. Cutting activity has created sizable openings in shallow water willow thickets. We hope this trend continues since it is impossible to use chemical controls in these locations. Cutting sign at Lake Isom also indicates a population increase.

Fox: No change evident. Animals were effected by a mange condition during late summer and early fall months. Some animals were virtually hairless and visably weakened.

Bobcat: Sign incidence on the upward trend but still relatively scarce.

Skunk: Still on upward cycle in West Tennessee. Refuge populations are limited by the lack of den sites due to low elevations.

Opossum: On the increase throughout area.

Groundhog: Becoming a problem in some areas.

E. Hawks, Eagles, Owls and Crows.

Resident hawk populations are limited and show little change from year

to year. Numbers of wintering Red-tailed and Red-shouldered hawks are down slightly from those of 1966. Sparrow Hawk numbers are unchanged. Marsh hawks show some increase.

Two active Osprey nests were located on the lake, one less than in 1965. No young were produced.

Forty-eight Bald Eagles were present on January 1, representing an increase of 11 birds above the records for the comparable period in 1965. Approximately 65 percent of the total were immatures. The concentration attracted numerous visitors before disappearing in February. Nest pair activity was observed at two locations. Both nest sites were abandoned. One or possibly two adult birds were summer residents.

Migrant eagles appeared in late September, building to a peak of 43 birds in mid-December. Age ratios were consistent with those reported for the previous winter.

F. Other Birds.

Two previous narratives have reported declining populations of Red-winged Blackbirds, Grackles, Cowbirds and Starlings. The sharpest decline occurred in 1966 when a 50 percent loss was noted. Apparently at least a part of the loss was due to changes in roosting sites. The flocks are recovering at a rapid rate, wiping out most of the losses.

A Male Vermillion Fly-Catcher was observed on December 27. The lake froze over two days later.

G. Fishing.

Reports and observations conclude that catches of good sized bream and crappie continued throughout the 1967 season. Largemouth bass catches showed little or no improvement in numbers or size over that of 1966. Large numbers of bream and crappie were taken and average weights remain the same as last year.

Commercial rough fish catches continue to decline as in 1965 and 1966.

Commercial catches of crappie during the season October 1. through December 31 dropped in numbers. Size and weight compared favorably with 1966 catches.

The following table compares number crappie caught, total weight, and average weight for 1967, 1966 and 1965.

	NUMBER	TOTAL WEIGHT	AVERAGE WEIGHT
1967	32,766	18,458	.563
1966	52,463	29,816	.568
1965	55,586	29,120	.524

Lake Isom. As reported in 1966, climatic factors were apparently responsible for heavy mortility of sport fish. Population build-up is slow. Only a small number of individuals attempted to take sport fish this year.

H. Reptiles.

Commercial removals serve to hold Reelfoot's turtle and terrapin populations at a fairly constant level. Lake Isom is still over populated.

I. Diseases.

None known except for the mange condition reported under Fox .

J. Small Game Animals.

A rather significant increase of both Cotton-tail and Swamp rabbits occurred on refuge lands. It is less evident elsewhere.

The total kill on the managed squirrel hunt was higher than had been anticipated. Breeding populations appear to be adequate. An increased mast crop should improve reproduction.

K. Duck Banding.

During 1967 a total of 1,542 waterfowl were banded, 1,503 ducks, 3 American Coots and 36 Canada geese. Duck species breakdown is as follows: Mallard 1,036, Wood Duck 127, Black Duck 48, Blue-Winged Teal 277, Green-Winged Teal 2, Ring-Neck 2, Widgeon 10, and Pintail 1. Refuge personnel also assisted Game Management Agent David Hall in banding 500 additional Mallards.

No difficulties were experienced in meeting post-season Mallard banding quotas. All were taken in the large Horseshoe Lake funnel trap. Efforts to attract other species to the site met with negative results in both post-season and pre-season operations.

The Blue and Green-Winged Teal were taken in a 21'x21' portable trap on Lake Isom during October.

We were much disappointed, but not surprised, over the lack of success in trapping woodies. Water levels appear to be the chief limiting factor. Birds have definite concentration points when lake stages are low and accept bait readily. High water, experienced this year, tends to keep birds scattered and apparently well fed. Early corn harvest operations triggering field feeding activities is also detrimental.

So near and yet so far remains the time worn story with regard to trapping Canada Geese. We can, without fear of contradiction, predict one fact, their movements and behavior are completely unpredictable. The traditional use of water areas as resting sites complicate the problem. Of necessity baiting efforts are confined to cropland feeding areas. Heavy post-season baiting was a complete failure.

Four sites at locations receiving goose use were baited this fall. Corn is still present on two of them. Another was visited for two successive days and then abandoned. The fourth site was the most promising we have ever had. Our bad luck held true to form. Some 175-200 geese within net range were lost as a result in failure of a radio controlled firing device. On the second day possibly 65 - 70 birds were permitted to feed in the hope more could be taken at some future date. Finally we were happy to band 36 geese. Three banded birds were taken in the process.

III. REFUGE MAINTENANCE AND DEVELOPMENT

A. Physical Development.

A wetlands rehabilitation project was initiated at Lake Isom. Willow brush was removed from 65 acres of low-lying high risk lands. A dozer equipped with cutter blade was hired for the operation. Heavy rains and rising lake levels halted brush piling and burning operations. When completed the area is capable of producing a good crop of natural or semi-natural foods. Openings created will enhance visitor use and wildlife observation opportunities.

The refuge road system was further improved. Projects included; one half mile new road constructed, application of 3,508 tons of gravel, three culverts installed, improvement of the field road running south along Bayou- Du- Chein, herbicidal treatment along roadsides as required, ditch cleanout, periodic mowing and grading. One culvert in a 450 foot fill on a new road may be converted into a water control structure for a 12 acre seasonal impoundment.

Remodeling of equipment shed, Real Property # 52, is nearing completion on the Long Point area.

Exteriors of all five buildings at headquarters site, the garage and residence at Lake Isom received a new coat of paint. Interior of the shop and equipment building was repainted. A much needed water filter system was installed at Quarters # 23.

Periodic flooding of the basement at the Lake Isom residence was eliminated by drilling an " up-hill " well from the base of the hill and terminating in the gravel underneath the basement floor. The puzzeled look on a well drilling contractor's face when he was asked if the job could be done will be long remembered. " An " up-hill " well, who ever heard of such a thing".

A small boat pit was excavated and a temporary boat house constructed at the terminus of the new Long Arm road. Approximately 350 feet of boat trail ditch was completed by dynamiting. The combined facilities will greatly facilitate patrol and census activities on the west side of the refuge. Approximately 480 feet of existing boat trails were deepened with dynamite and another 250 feet of ditching will provide access into Lake Isom.

Boundary marking was brought up to standard around the entire perimeter of Lake Isom and in the Bayou Du-Chein portion of Reelfoot's boundary. Other markers were replaced as needed in spot locations.

Soil and moisture activities included: heavy cut and fill operations with dozer and dirt pan - 25 acres; preliminary, semi - final and final planeing practices - 310 acres; mechanical weed control - 310 acres; deep plowing - 72 acres; soil ammendments - 73 acres.

B. Plantings.

1. Aquatics

No plantings made.

2. Cultivated Crops

Cooperative farmers experienced a trying year. During April, May, and June recorded rainfall was 7.63 inches above normal. Plantings were delayed, pre-merge results were effected, application of anhydrous ammonia was difficult and in a few instances impossible and parts of some fields were never cultivated after planting. Germination was generally poor. One corn field was planted three times. Further losses resulted from flooding and scalding. Excessive moisture aggravated the weed problem. Harvest operations were also hampered by excessive rainfall. Over 30 acres of soybeans are still in the field.

Refuge personnel prepared seedbeds and planted 21 acres of Jap millet and 75.2 acres of wheat.

A commercial flying service was employed to over-plant 379.7 acres of wheat and 126.2 acres of barley. Most of the operation was over soybean fields. By timing the seeding to coincide with soybeans beginning to drop their leaves, excellent stands may be obtained at nominal cost. Under dry conditions the moisture collected in the leaf mulch will produce germination even better than that obtained in prepared seed beds.

C. Collections and Receipts

Refuge share of the winter grain harvest amounted to 670 bushels of wheat and 450 bushels of barley. An estimated 1,100 pounds of Jap millet and 700 bushels of corn were harvested.

D. Control of Vegetation.

1. Aquatic

As in the past, aquatic pest plant control projects were a cooperative venture involving the Bureau and the Tennessee Game and Fish Commission.

Approximately 151 acres of Spatterdock were treated with 2,4-D at a rate of 2 pounds acid equivalent per acre. Initial symptoms indicate a good overall kill may be expected when the final analysis is made next spring. Results in shallow water subject to heavy siltation are still disappointing, however.

Complete kills were obtained on the 499 acres of American Lotus treated with 2,4-D. Application rate, one pound per acre.

Dalapon was applied to 70 acres of Cutgrass at the rate of 10 pounds active ingredient per acre. Initial symptoms indicate final kill will approach the 85 - 90 percent level obtained in 1966.

2. Terrestial

Some progress is being made in combatting pest plant infestation on croplands. It is a slow and expensive process on the wet gumbo type soils. The problem was complicated by excessive soil moisture throughout most of the year.

Cooperators pre-merged all row crops with approved chemicals. Results varied greatly from field to field and day to day. Good results were obtained from treating corn acreage with a non-volatile 2,4-D and water. Correct timing appears to be essential to success in using this formulation. Best results were obtained from applications made just prior to the " shooting " and " tasseling " stage of growth. No adverse accects were noted on adjacent soybean acreage.

Wet weather prevented planned use of herbicidal oils on soybeans.

Cooperators are displaying increased interest in pest plant problems. Over 70 acres of knee high Johnson grass infested acreage were treated with Dalapon at a rate of 10 pounds per acre. Fields were plowed three days later. After a 15 day waiting period, seed beds are prepared and plantings made. When combined with a Treflan pre-merge the operation is quite sucessful on soybean acreage.

Approximately 8.5 miles of roadsides, ditch banks and field edges were treated with Amate to control weeds, vines and woody growth. Results were excellent.

Nearly 700 acres received some type of mechanical weed control: disking, spring-toothing or chiseling. A chisel plow equipped with 14 inch sweeps appears to be the most efficient tool yet found for this type work.

E. Wood Duck Nest Project

In cooperation with vocational students at the Lake County High School, Tiptonville, Tennessee, 36 Wood Duck nest boxes were constructed and erected. Since last years observations indicated a decided preference for lake shore " urban " areas for nesting sites, all boxes were placed in the various State Parks, concession areas, boat docks and on private property. Thirty-seven of 38 boxes checked at these locations were used, with 315 eggs hatching. We have confirmed evidence of double-nesting activity in 11 boxes. Double useage figures are not included in the hatching data.

In the second year boxes, well scattered over Reelfoot Lake, only 15 of 33 boxes were occupied with 132 eggs hatched. At Lake Isom, 4 of 20 boxes could not be reached for checking. Of the remaining 16 boxes only one hatch of 8 eggs was confirmed. Females were still on two nests during the first week in July.

No evidence of predation was noted except that two boxes contained other bird nests on top of a clutch of woodie eggs. The heavy in populated areas with light use in remote sections is a mystery. One theory is that raccoon and snakes are rather scarce in the populated areas. Public interest in the project was high and human molesting of nests was negligable. On several occasions ducklings were observed leaving nests and move across open water to vegetated areas across the lake.

IV. Resource Management

A. Fur Harvest.

Populations do not justify harvest operations.

B. Timber Harvest.

We are indebted to Forester Clyde Stewart, Hatchie Refuge for his

assistance in cruising, marking and eventual sale of 188,145 B.F. of hardwood saw timber on the North Reelfoot Unit. Most of the sale was overage cottonwood and willow. Removal should eventually enhance wildlife habitat.

V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. Progress Report.

Nothing to report.

VI. PUBLIC RELATIONS

A. Recreational Uses.

Recorded incidence of visiter use remained about the same as 1966.

B. Visitors.

The following were official visitors at this station.

Mr. Sam W. Barton, Hatchie Refuge	March 17
Mr. Clyde A. Stewart, Hatchie Refuge	March 17
Mr. William J. Allen, Wildlife Mgt. Institute	May 16
Dr. Clarence Cottam, Dept. of Interior Evaluation Team	May 31
Mr. Donald J. Hankla, Div. of Refuges - R.O.	June 28
Mr. Carl Fermanich, Washington Office	June 28
Mr. Claudie Denton, Washington Office	August 22
Mr. C. Edward Carlson, Regional Director	December 12
Mr. Lawrence S. Givens, Div. of Refuges - R.O.	December 12

The refuge office was host to many other visiters seeking information according to their various interests. State conservation officers and officials, cooperative farmers, local business man and individuals visited the office on official and semi-official business.

C. Refuge Participation.

Refuge personnel participated in making the annual Audubon Christmas Bird count.

Field trips were conducted and talks made to two student groups from Murray State College, Murray, Ky.

Attendance at informal meetings with various private groups, state and county officials are too numerous to mention.

D. Squirrel Hunt.

The annual public squirrel hunt was conducted for a twelve day period on both refuges. Dates were September 11 through 16 and September 25 through 30. Results of the experimental split season hunt in 1966 indicated the week of rest improved kill potentials. In the past, total kills have never been detrimental to breeding populations, therefore, the 1967 hunt was again conducted on the split season basis.

A hunt inovation was the discontinuance of the permit system. Previously kill and other hunt data had been obtained from returned permits. To secure the same information this year required more man hours in the field than under the old system. Field contacts indicated the extra time was well worth while from the standpoint of enforcement, accuracy of data and public relations.

Two hundred and five hunters were checked, representing 74.5 percent of the estimated total of 275 participating hunters. Four hundred fifty-nine squirrels, 412 Fox and 47 Grays, were taken for an average bag of 2.25 squirrels per hunter trip. Only 26 hunters, 12.7 percent, reported no kill. On this basis successful hunters bagged an average of 2.56 squirrels per trip, indicating a total kill of 619.

Total bag was well above that expected despite unfavorable wind and weather conditions. Refuge populations were below the long term average as a result of a poor mast crop last fall. Late season breeding activity was indicated by a high percentage of adult females suckling young. An age ratio of 39.4 percent juveniles to 60.6 percent adults support this conclusion. In 1966, 61 percent of the bag were juveniles. Sex comparison was 56.8 percent males and 43.2 percent females.

E. Raccoon Hunt.

The Tennessee Game and Fish Commission and the Kentucky Department of Fish and Wildlife Resources again cooperated in conducting the annual refuge 'coon hunt. Dates were, September 18 through 23 and October 2 through 7. The split season was arranged to prevent conflict with the squirrel hunt and provide the highest quality hunt possible. An alternate night schedule was initiated on the Grassy Island section and Lake Isom for the same purpose. Other hunt regulations were unchanged.

As expected a state of utter confusion reigned the first night when 152 hunters with 137 dogs checked in. Forty-four raccoon were bagged. More time was expended finding and bringing in other hunter's dogs than in hunting.

Data secured at checking stations revealed that a total of 240 Raccoon were taken, 21 percent below the 1966 bag of 303. Hunter interest and participation suffered a 22 percent reduction, 644 trips in 1967 as compared to 824 in 1966. This trend was first thought to be the result of a decline in hunter success. A comparison of records revealed the success ratio actually climbed from .368 to .372 Raccoon per hunter trip. Subsequent contacts indicated numerous hunters did not participate because of favorable weather and soil moisture conditions for harvest operations or other field work.

A break-down of age and sex ratios, in percentages, is as follows: adult male - 17.92, juvenile male - 33.75, adult female - 19.99, juvenile female - 28.34. Totals 62.09 percent juvenile and 37.91 percent adults. This ratio compares favorably with 1966 figures. During the 1965 hunt when an overpopulation condition was present, the rate was 54 percent adults.

The attitude of a large majority of the hunters is worthy of mention. Their compliance with regulations and expressed appreciation for hunting priviledges and assistance of the refuge staff in locating missing dogs more than compensated for the sleep lost in administering the hunt.

F. Violations.

Refuge personnel apprehended 14 persons for refuge trespass or violation of migratory bird laws. All cases are pending.

G. Safety.

Safety meetings have been held each month. The day to day policy of mentioning hazards relating to jobs-of-the-day has been continued.

No accidents have occurred.

VII. OTHER ITEMS

The recreational airport adjacent to the refuge boundary north of Gray's Landing has been completed. Plans are under way for construction of a resturant and other facilities in the near future.

The highway bridge-spillway, in its "settling" condition continues to be a problem due to leakage. Many man hours are necessary to shore up the large gate to prevent excessive leakage.

The Reelfoot - Indian Creek Watershed Project is progressing with virtually all the necessary land bought.

The Refuge Manager, accompanied by Mr. Relph Burrus, State Park Superintendent, attended a meeting of the Tennessee State Planning Commission in Nashville, Tennessee. The purpose of the meeting was to study the plan of the over-all recreation facets of Reelfoot Lake.

A first has been recorded for Reelfoot Refuge in that a portion of it's acreage has been sold. A 50 foot right-of-way strip at Lake Isom totaling 3.94 acres was sold to an adjacent land owner by bid invitation.

Local interest in wild and semi-domesticated Mallard Ducks remains high. Many residents feed and attempt to protect their " private" lake side flocks. Interest is also very high in the Wood Duck nest box program. Continued requests for additional boxes indicates local participation is on the up-swing and this will be a great assist to the woodie population.

Respectfully submitted by:

January 19,1968

John L. DeLime

John L. DeLime, Refuge Manager

Approved:

/s/ Harold J. Hawkins

~~Regional Director~~

Asst. Regional Refuge Supervisor

JAN 25 1968

Date

(9/63) Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **8 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4/20-6/10	Spatterdock	Reelfoot Lake	151	2,4-D, Low volatile ester	302 lbs. A/E	2 lbs.AE/A	Water 100 gal/A	Boat Equipment

10. Summary of results (continue on reverse side, if necessary)

Cooperative program with Tennessee Game and Fish Commission. Acreage includes both Refuge and State controlled waters. Continuing nature of operation removes possibility of reporting detailed weather data, periodical sympton observations, etc. Operation generally successful. Typical symptoms appear 1 - 4 days after treatment, continuing 10 - 15 days. Regrowth then appears in stunted or twisted form. In late fall roots float to the surface and rot. Operation ineffective in water less than 14 inches deep or on heavily silted sites. No apparent adverse effects.

Total costs $ 759.90, $ 4.90 per acre.

(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

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INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7/6- 9/25	American Lotus	Reelfoot Lake	499	2, 4-D Low volatile ester	499 lbs.A/E	1 lb. AE/A	Water 100 gal.	Boat Equipment

10. Summary of results (continue on reverse side, if necessary)

Operation conducted in cooperation with the Tennessee Game and Fish Commission. Acreage reported includes both Refuge and State controlled waters. Continuing nature of program eliminates possibility of detailed information on weather, symptoms, tec. Two days after treatment species displays typical wilt and discoloration. Plants continue to deteriorate until kill is complete. A very successful and popular project.
No apparent adverse effects.

Total costs $ 1,302.19. $ 2.81 per acre.

NEW BOOKS FOR LIBRARY — John Delime, manager of the Reelfoot Refuge, presents local librarian Mrs. George Lee with two books donated by the Federal Bureau of Sport Fisheries and Wildlife. The books, "Waterfoul Tomorrow," and "Birds In Our Lives," will be in circulation in about two weeks. (Photo by Adelle)

FISH SAMPLING PROJECT - Lake Isom

Eagle Roost - Glory Hole section of Reelfoot Lake. Up to 40 eagles
ABOVE: have been observed in this area at one time.
BELOW: Immature Bald Eagle - Glory Hole.

ABOVE: New boat trail for fishing and patrol access into Lake Isom.
BELOW: Terminus of Grassy Island Road. Depicting brushing operations to permit unobstructed view of lake and graveled turn-around for visitors.

ABOVE: Reclamation Project - Lake Isom.

BELOW: Reclamation Project - Lake Isom. Proper management should provide excellent crops of natural or semi-natural foods.

ABOVE: Pure stand of wild millet in a low-lying slough following reclamation by brushing and disking.

BELOW: Good milo prospects. Completely consumed by blackbirds 4 weeks after photo was made.

ABOVE: New road providing access into Long Arm area.
BELOW: Fill on same road. Can be used for seasonal impoundment area.

ABOVE: Terminus of Long Arm Road - Excavated ditch permits easy access into west portion of refuge for patrol purposes.

BELOW: Boathouse - Long Point.

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Realfoot MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	18,000	21,500	24,500	24,000	22,500	17,000	14,500	15,000	15,000	6,500
Cackling										
Brant										
White-fronted										
Snow	2	3	2	2				5	15	22
Blue	4	3								75
Other	35	35	35	35	30	25	25	25	20	15
Ducks:										
Mallard	115,000	117,000	116,000	107,900	14,000	7,000	7,800	7,500	5,200	2,600
Black	2,900	3,200	3,100	2,900	500	75	80	90	75	20
Gadwall	4,300	2,100	1,500	900	450	125	140	150	250	200
Baldpate	2,900	1,900	950	650	400	90	350	325	325	325
Pintail	2,800	2,200	800	650	150	85	100	125	150	95
Green-winged teal	950	900	325	225	50	50	50	40	25	25
Blue-winged teal										
Cinnamon teal										
Shoveler	1,300	1,200	900	600	100	115	125	130	130	150
Wood	3,100	2,800	2,200	1,700	1,500	1,400	1,450	1,500	1,300	1,200
Redhead	75	100	75	60	25	20	25	15	15	10
Ring-necked	4,800	3,600	2,100	1,800	1,100	650	1,600	1,600	2,800	2,100
Canvasback	200	150	150	125	70	25				
Scaup	250	350	275	250	400	225	300	300	300	300
Goldeneye	70	75	65	30	10	10	35	30	20	5
Bufflehead	65	60	50	20	5				10	10
Ruddy	30	15								30
Other	50	50	55	40	25	20	25	25	15	10
Coot:	21,000	10,200	11,000	11,000	4,500	3,500	6,200	6,000	6,000	5,800

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE: Sealfoot MONTHS OF January TO April, 1967

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	1,700	1,400	1,100	450	53	19	7		1,282,603		
Cackling											
Brant											
White-fronted											
Snow	20	8	6	3					616		
Blue	60	70	65	35	16				2,296		
Other	5	18							3,906		
Ducks:											
Mallard	500	475	175	90	40	40	30	30	3,503,180		
Black	5	5							90,650		
Gadwall	75	325	430	460	215	90	80	69	82,450		
Baldpate	450	775	850	975	770	425	315	315	89,740		
Pintail	10								57,155		
Green-winged teal	5								18,445		
Blue-winged teal		1,750	2,175	3,200	2,700	2,550	2,400	2,400	105,825		
Cinnamon teal											
Shoveler	350	400	490	675	550	500	475	475	61,305		
Wood	1,050	1,000	1,000	1,000	1,000	1,000	1,000	1,000	136,500		
Redhead									2,940		
Ring-necked	1,450	1,600	1,500	1,300	850	525	115	115	200,545		
Canvasback									5,040		
Scaup	175	375	275	150	40	40	10	10	28,115		
Goldeneye	10	15	10						2,695		
Bufflehead	5	15							1,540		
Ruddy	35	65	120	90	25	8			2,765		
Other	2								2,219		
Coot:	3,300	9,700	6,300	5,800	4,700	3,800	2,900	2,900	853,400		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	1,289,421	24,500	
Ducks	4,440,109	139,290	
Coots	853,400	21,000	

SUMMARY

Principal feeding areas: All water, marsh and agricultural areas.

Principal nesting areas:

Reported by: John L. DeLine

John L. DeLine, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Realfoot MONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	110	30	35	40	45	55	55	55	55	55
Black										
Gadwall	20	11	2							
Baldpate	85	14	6							
Pintail										
Green-winged teal										
Blue-winged teal	1,150	420	40	14	2					
Cinnamon teal										
Shoveler	65	28	14	1						
Wood	1,000	1,050	1,100	1,300	1,450	1,600	1,700	1,850	1,950	1,950
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other H. Merganser	9	13	15	20	20	20	20	20	20	20
Coot	2,450	625	190	115	115	115	120	130	130	135

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE : Realfoot

MONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	55	55	55	55	55	55	60	60	6,895	3	20
Black											
Gadwall									231		
Baldpate									735		
Pintail							9	14	161		
Green-winged teal											
Blue-winged teal					1	21	136	415	15,393		
Cinnamon teal											
Shoveler											
Wood	1,950	2,000	2,050	2,100	2,150	2,150	2,250	2,300	223,300	51	1,250
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other H. Merganser	20	20	20	20	20	20	20	20	2,427	1	10
Coot:	135	135	135	135	135	135	135	135	36,435	2	30

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	249,137	2,809	1,280
Coots	36,435	2,450	30

285,572

SUMMARY

Principal feeding areas: Lake, shorelines and field edges.

Principal nesting areas: lake and shorelines.

Reported by: John L. DeLime

John L. DeLime, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Reelfoot MONTHS OF September TO December, 19 67

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada				19	14	145	725	875	3,350	4,750
Cackling										10
Brant										
White-fronted										
Snow						1			2	
Blue						1			3	
Other										
Ducks:										
Mallard	60	95	215	510	550	625	12,350	23,400	31,400	47,000
Black							120	210	270	550
Gadwall		5	80	135	220	515	17,000	20,500	20,800	33,000
Baldpate		25	45	320	1,100	3,100	24,600	24,200	18,300	15,800
Pintail	14	35	115	525	275	16	820	2,700	2,900	2,600
Green-winged teal				10	45	70	4,250	4,400	3,650	2,850
Blue-winged teal	1,050	2,875	5,350	5,600	4,250	4,750	825	350	270	30
Cinnamon teal										
Shoveler				25	20	55	275	325	375	1,650
Wood	2,910	2,650	3,650	3,750	3,600	3,750	4250	4,850	3,900	4,100
Redhead							10	12	15	40
Ring-necked						65	7,600	8,100	3,300	13,200
Canvasback										10
Scaup							130	140	160	185
Goldeneye										81
Bufflehead										
Ruddy							300	320	300	650
Other H. Merg.	20	20	20	20	20	25	25	25	25	20
Coot	150	325	825	1,600	3,300	6,600	35,000	34,500	35,000	22,000

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE **Reelfoot** MONTHS OF **September** TO **December**, 19**57**

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	5,600	5,800	4,200	7,800	10,300	12,200	12,000	12,000	486,446		
Cackling	15	25	30	30	30	30	30	30	1,360		
Brant											
White-fronted											
Snow			2	1	1	2	2	2	78		
Blue				2	2	1	1	1	72		
Other											
Ducks:											
Mallard	65,400	51,000	23,000	20,500	24,750	24,600	32,000	32,000	2,531,385		
Black	1,050	875	875	400	400	450	850	850	42,850		
Gadwall	15,000	12,000	5,600	5,100	2,200	1,850	5,100	5,100	861,165		
Baldpate	10,200	7,000	2,800	2,050	1,950	1,500	1,500	1,500	939,830		
Pintail	2,400	1,500	350	275	275	300	800	800	111,750		
Green-winged teal	2,200	2150	1,600	1,150	900	900	750	750	175,225		
Blue-winged teal	35								177,695		
Cinnamon teal											
Shoveler	2,150	3,100	2,700	1,600	1,050	875	350	350	102,200		
Wood	4,200	3,050	2,750	2,150	2,100	1,750	1,500	1,500	330,970		
Redhead	65	80	80	65	70	60	60	60	3,959		
Ring-necked	8,600	7,000	6,500	5,900	4,700	3,700	3,700	3,700	552,255		
Canvasback	15	75	70	55	50	40	300	300	4,606		
Scaup	65	125	125	220	270	310	350	350	15,050		
Goldeneye	25	40	70	70	60	55	30	30	2,627		
Bufflehead	10	35	55	80	55	65	35	35	2,800		
Ruddy	460	460	225	170	125	90	15	15	21,820		
Other H. Merg.	25	25	40	40	40	40	30	30	3,180		
Coot:	24,500	15,000	11,000	12,500	10,500	8,300	8,300	8,300	1,600,100		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	487,857	12,200	
Ducks	5,979,366	115,500	
Coots	1,600,100	55,000	

SUMMARY

Principal feeding areas Lake shoreline and adjacent field edges.

Principal nesting areas Lake area.

Reported by John L. DeLime

John L. DeLime, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Lake Isom MONTHS OF January TO April, 1967

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	375	350	425	425	850	750	1,300	1,200	1,200	575
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	47,500	46,500	37,000	24,000	4,000	3,800	3,600	3,000	625	325
Black	1,300	1,400	1,200	300	75	40	30	25	15	5
Gadwall	150	150	50	30	10					
Baldpate	75	90	20	10	10		10	10	15	10
Pintail	50	65	40	15	10	5	10	10	20	20
Green-winged teal	40	25	10	10		5	5	5	5	
Blue-winged teal										
Cinnamon teal										
Shoveler			15						10	30
Wood	1,900	1,700	1,100	912	850	850	800	850	700	350
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:	75	75		25	25	25	35	35	40	50

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE: Lake Isom

MONTHS OF January TO April, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	125		67						53,494		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	120	20	10	10	5				1,193,605		
Black	5								30,765		
Gadwall		15	25	25	15	10	10	10	3,440		
Baldpate	5	35	40	55	50	30	20	25	3,420		
Pintail									1,715		
Green-winged teal									735		
Blue-winged teal		125	225	350	350	225	200	225	10,650		
Cinnamon teal											
Shoveler	35	10	60	70	90	90	60	70	3,150		
Wood	200	200	200	200	175	175	175	175	79,534		
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:	50	75	60	50	35	15	10	10	4,770		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	53,494	1,300	
Ducks	1,327,014	51,015	
Coots	4,770	75	

1385278

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by John L. Dobbins, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Lake Isom MONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall	8									
Baldpate	12	6								
Pintail										
Green-winged teal										
Blue-winged teal	175	130	22							
Cinnamon teal										
Shoveler	20	5	4							
Wood	50	30	35	40	40	40	40	40	40	40
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
COOT	5									

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE: Lake Isom — MONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard											
Black											
Gadwall									96		
Baldpate									116		
Pintail								13	91		
Green-winged teal											
Blue-winged teal						8	65	150	3,850		
Cinnamon teal											
Shoveler									63		
Wood	45	45	45	60	70	75	110	125	6,790	2	15
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:									35		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	10,966	288	25
Coots	35	5	

SUMMARY

Principal feeding areas: Lake shoreline and adjacent field edges

Principal nesting areas: Lake area.

Reported by: John L. DeLime

John L. DeLime, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Lake Isom MONTHS OF September TO December, 19 57

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada							10	10	40	175
Cackling										
Brant										
White-fronted										
Snow							1	1		
Blue							4	12		
Other										
Ducks:										
Mallard			10	15	20	25	225	1,750	5,600	5,600
Black							10	10	35	80
Gadwall				10	10	15	125	25	120	90
Baldpate		15	15	15	10	20	590	60	230	40
Pintail	15	5	35	15	20		25	20	175	25
Green-winged teal				2		5	120	20	55	60
Blue-winged teal	150	325	575	375	400	520	150	70		
Cinnamon teal										
Shoveler									40	
Wood	150	190	210	250	275	370	2,350	2,300	2,300	2,250
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot				15	20	20	20	30	60	70

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Lake Isom MONTHS OF September TO December, 19 67

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	1 day	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:												
Whistling												
Trumpeter												
Geese:												
Canada	150	155	155	160	160	260	300	300		11,025		
Cackling												
Brant												
White-fronted												
Snow										14		
Blue										112		
Other												
Ducks:												
Mallard	14,000	14,000	9,500	8,750	9,800	12,000	10,000	10,000		715,765		
Black	95	110	120	95	100	125	350	350		6,260		
Gadwall	85	40	230	225	200	40	40	40		5,825		
Baldpate	25	15	10	30	35	20	10	10		1,990		
Pintail	30	40	15	20	20	25	30	30		3,621		
Green-winged teal	70	65	55	65	60	40	25	25		4,519		
Blue-winged teal										15,655		
Cinnamon teal												
Shoveler	15	20	25	25	25	15	10	10		955		
Wood	2,250	1,980	1,750	975	970	850	775	775		111,910		
Redhead												
Ring-necked					35	30				455		
Canvasback												
Scaup												
Goldeneye												
Bufflehead												
Ruddy												
Other												
Coot:	90	85	40	40	40	30	30	30		4,090		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	11,451	300	
Ducks	908,956	19,260	
Coots	4,090	90	

SUMMARY

Principal feeding areas Lake shoreline and adjacent field edges.

Principal nesting areas Lake area.

Reported by John L. DeLine

John L. DeLine, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Reelfoot Months of January to April 1967

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	1	3/4	235	4/7-4/30	Present		1			8,100
Great Blue Heron	Present		37	4/1-4/30	"		1			1,200
Little Blue Heron	1	4/4	5	4/29	"					250
Snowy Egret	1	4/6	1	4/6-4/18	1	4/18				15
Double-crested Cormorant	1	3/11	17	3/26	2	4/22				220
Black-crowned Night Heron	1	3/18	4	4/11	1	4/28				70
Pied-billed Grebe	1	3/2	70	4/7	2	4/29				600
Little Green Heron	1	4/4	13	4/12-4/30	Present					350
Sora Rail	3	4/1	145	4/25	25	4/30				800
Common Gallinule	1	4/5	22	4/17-4/30	Present					350
II. Shorebirds, Gulls, and Terns:										
Gull, Herring	2	1/1	15	2/14-3/14	1	4/13				950
Gull, Ring-billed	7	1/1	22	2/13	1	4/16				1,000
Wilson Snipe	4	3/10	190	4/3	1	4/26				3,800
Lesser Yellow-legs	2	4/5	225	4/14-4/30	Present					4,200

(over)

(1)	(2)	(3)		(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove	Present	80	3/15-4/30	Present		6,500
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl	Present	6	1/1-4/30	Present		1,050
Magpie						
Raven						
Crow	Present	800	1/1-3/10	Present		58,000

Reported by John L. DeLime, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Reelfoot Months of May to August 19 67

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	Present		340	6/15-7/30	Present		1	102	95	24,150
Great Blue Heron	"		65	7/15-8/25	"		1	16	20	6,800
Little Blue Heron	"		32	7/1 - 8/6	"		1	6	8	1,300
Yellow-crowned Night Heron	"		14	6/25-8/5	"			2	4	350
Least Bittern	"		55	7/10-8/20	"			18	25	4,750
Common Gallinule	"		50	7/1 -8/20	"			16	28	4,600
Purple Gallinule	"		35	7/1 -8/20	"			10	17	2,900
Little Green Heron	"		18	7/10-8/30	2			7	10	1,100
I. Shorebirds, Gulls, and Terns:										
Gull, Herring	1	5/3	4	8/21-8/30	Present					60
Least Tern	1	7/9	290	8/4 -8/18	"					1,250
Black Tern	3	7/1	120	7/8 -7/21	1	7/29				1,300
Lesser Yellow-legs	1	8/13	60	8/20-8/30	Present					1,100

(over)

(1)	(2)	(3)		(4)	(5)		(6)
II. Doves and Pigeons:							
Mourning dove White-winged dove	Present	190	8/7-9/20	Present		75	15,150
IV. Predaceous Birds:							
Golden eagle Duck hawk Horned owl Magpie Raven Crow	Present	6	5/1-8/30	Present			1,050
	Present	220	7/15-8/30	Present	12	18	23,700

Reported by John L. Robins

John L. Robins, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition and in groups in proper order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Roslfoot Months of September to December 19 67

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	Present		255	8/27-8/30	1	12/20	1	0	0	5,500
Great Blue Heron	Present		110	9/30-11/15	Present		1	0	0	7,000
Little Blue Heron	Present		20	9/1- 9/20	1	10/20	0	0	0	200
American Bittern	1	9/15	8	9/20-10/5	1	11/24	0	0	0	100
Double-crested Cormorant	2	9/10	75	10/15-11/2	2	12/20	0	0	0	2,800
Least Bittern	Present		55	9/1-9/20	1	10/1	0	0	0	450
Pied-billed Grebe	2	9/12	190	10/20-11/15	1	12/30	0	0	0	2,600
Yellow-crowned Night Heron	Present		20	9/15-10/20	-	-	0	0	0	500
Common Gallinule	Present		50	9/1-9/15	1	10/15	0	0	0	750
Purple Gallinule	Present		35	9/1-9/15	1	10/22	0	0	0	600
Little Green Heron	Present		18	9/1-9/20	1	9/30	0	0	0	250
I. Shorebirds, Gulls, and Terns:										
Gull, Herring	Present		6	12/20	Present		0	0	0	100
Gull, Ring-billed	3	9/5	215	12/15-12/30	Present		0	0	0	2,600
Lesser Yellow-leg	1	9/10	275	9/10-9/20	2	10/25	0	0	0	4,800
Common Snipe	1	10/15	75	10/30-11/10	2	12/20	0	0	0	1,500
Tern, Least	Present		45	9/1-9/20	3	11/2	0	0	0	750

(over)

(1)	(2)	(3)	(4)	(5)	(6)
II. Doves and Pigeons:					
Mourning dove White-winged dove	Present	170	10/3-10/20	Present	13,200
IV. Predaceous Birds:					
Golden eagle Duck hawk Horned owl Magpie Raven	Present	4	9/11-12/31		500
Crow	Present	2,000	12/5-12/31	Present	99,000

Reported by John L. Peline, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Lake Isom Months of January to April 19 67

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	1	2/23	13	4/9-4/20	Present					200
Great Blue Heron	Present		11	2/10-2/20	Present					125
Little Green Heron	1	4/8	2	4/14	Present					50
Black-crowned Night Heron	1	3/11	1	3/11	1	3/11				10
II. Shorebirds, Gulls, and Terns:										

(over)

(1)	(2)	(3)		(4)		(5)	(6)
III. Doves and Pigeons:							
Mourning dove	Present	50	3/10-4/30	Present			4,400
White-winged dove							
IV. Predaceous Birds:							
Golden eagle							
Duck hawk							
Horned owl	Present	2	1/1-4/30	Present			240
Magpie							
Raven							
Crow	Present	225	1/1-3/10	20	4/26		18,000

Reported by John L. DeLima, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Lake Isom Months of May to August 19 67

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	Present		13	8/9-8/25	Present					1,300
Great Blue Heron	"		7	8/13-8/30	"					850
Little Blue Heron	1	7/10	28	8/18-8/30	"					900
Little Green Heron	Present		6	8/10-8/30	"			1	2	600
Least Bittern	1	6/10	3	6/25-8/15	"			1		100
I. Shorebirds, Gulls, and Terns:										

(over)

(1)	(2)	(3)		(4)	(5)	(6)
II. Doves and Pigeons:						
Mourning dove	Present	105	7/25-8/20	Present	35	14,650
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl	Present	2	5/1-8/30	Present		240
Magpie						
Raven						
Crow	Present	60	7/1-8/30		4 12	5,900

John L. DeLime

Reported by **John L. DeLime, Refuge Manager**

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Lake Isom Months of September to December 19 67

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	Present		20	9/1-9/30	1	11/17				$00
Great Blue Heron	Present		15	10/20-11/5	Present					1,100
Little Blue Heron	Present		65	9/10-9/30	1	10/17				7 00
Little Green Heron	Present		6	9/1-9/25	1	10/12				100
Least Bittern	Present		5	9/1-9/18	1	9/20				50
I. Shorebirds, Gulls, and Terns:										
Common Snipe	1	10/20	25	10/30-11/20	1	12/15				$50

(over)

(1)	(2)	(3)		(4)	(5)	(6)
II. Doves and Pigeons:						
Mourning dove White-winged dove	Present	160	9/10-10/20	Present		8,700
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl	Present	5	9/1-12/1			250
Magpie						
Raven						
Crow	Present	400	11/25-12/31	Present		20,000

Reported by John L. De Lire, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen. The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge **Reelfoot** For 12-month period ending August 31, 19**67**

Reported by John L. DeLine Title **Refuge Manager**

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage		(3) Use-days	(4) Breeding Population	(5) Production
Reelfoot North Unit	Crops	1,274	Ducks	12,140,200	425	490
	Upland		Geese	1,635,531		
	Marsh	1,440	Swans			
	Water	1,325	Coots	2,766,420	40	10
	Total	4,039	Total	16,542,151	465	500
Reelfoot South Unit	Crops	36	Ducks	4,157,894	618	790
	Upland		Geese	152,150		
	Marsh	2,896	Swans			
	Water	3,375	Coots	1,275,600	75	20
	Total	6,307	Total	5,585,644	693	810
Lake Isom	Crops	496	Ducks	4,382,350	30	25
	Upland	20	Geese	61,733		
	Marsh	594	Swans			
	Water	740	Coots	13,730		
	Total	1,850	Total	4,457,813	30	25
Total	Crops	1,806	Ducks	20,680,444	1,073	1,305
	Upland	20	Geese	1,849,414		
	Marsh	4,930	Swans			
	Water	5,440	Coots	4,055,750	115	30
	Total	12,196	Total	26,585,608	1,188	1,335
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Reelfoot & Lake Isom Months of January to April, 19 67

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
REELFOOT										
Bob-white Quail	1225 acres farm-land. 900 acres bottomland timber	70.8							30	
LAKE ISOM										
Bob-white Quail	446 acres farm-land. 634 acres bottomland timber	54.0							20	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Reelfoot and Lake Isom Months of May to August, 19 67

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Reelfoot										
Bob-white Quail	1,225 acres farmland. 900 acres bottomland timber	60.6	1	5					35	
Lake Isom										
Bob-white Quail	446 acres farmland. 634 acres bottomland timber	54.0	0	0					20	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Reelfoot & Lake Isom Months of September to December, 19 67

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Reelfoot										
Bob-white Quail	1,125 acres farmland 900 acres bottomland, swamp, timber	28.4	0	0		0	0	0	55	
Wild Turkey	1,346 acres bottomland, swamp, timber.	86.1	0	0		0	0	0	4	
Lake Isom										
Bob-white Quail	446 acres bottomland, swamp., timber	54.0	0	0		0	0	0	20	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Form NR-3
(June 1945)

BIG GAME

Refuge Reelfoot & Lake Isom Calendar Year 1967

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Reelfoot														
White-tailed Deer	5,500 acres swamp type forest and field edges.	10										50	40	
Lake Isom														
White-tailed Deer	700 acres swamp type forest and field edges.	1										8	6	

Remarks:

Reported by John L. DeLoach

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge [illegible] Year ending April 30, 1937

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Popula-tion
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												13
[illegible]		[illegible]												31
[illegible]		[illegible]	[illegible]											1,1[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												2
[illegible]		[illegible]	[illegible]											[illegible]
[illegible]		[illegible]	[illegible]											[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												[illegible]

* List removals by Predator Animal Hunter

REMARKS:

Reported by John L. DeLuca

[illegible]

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge [illegible] Year ending April 30, 1947

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Popula-tion
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												6
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]	[illegible]											[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]	[illegible]											[illegible]
[illegible]		[illegible]												[illegible]
[illegible]		[illegible]												[illegible]

* List removals by Predator Animal Hunter

REMARKS:

Reported by John L. Le Sueur

[illegible]

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1755
Form NR-5
60701

DISEASE

Refuge Boelfoot & Lake Isom Year 19 67

Botulism None

Lead Poisoning or other Disease None

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life _____

Remarks Negative Report

Kind of disease _____

Species affected _____

Number Affected

Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks Negative Report

NR-6

Bureau of Sport Fisheries and Wildlife

PUBLIC RELATIONS

(See Instructions on Reverse Side)

Refuge Reelfoot and Lake Isom — Calendar Year 1967

1. Visits

a. Hunting 874 b. Fishing 37,935 c. Miscellaneous 3942 d. TOTAL VISITS 42,751

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl			
Upland Game	874	8,200	Refuge
Big Game			
Other			

Number of permanent blinds

Man-days of bow hunting included above

Estimated man-days of hunting on lands adjacent to refuge 16,000 Reelfoot - 2,000 Isom

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	4,000	
Streams and Shores		

1c. Miscellaneous Visits

Recreation 3,942 Official 95

Economic Use 2,505 Industrial

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	On Refuge NO. OF GROUPS	On Refuge NUMBER IN GROUPS	Off Refuge NO. OF GROUPS	Off Refuge NUMBER IN GROUPS
Sportsmen Clubs				
Bird and Garden Clubs	2	50		
Schools	3	75		
Service Clubs			1	30
Youth Groups				
Professional-Scientific				
Religious Groups				
State or Federal Govt.				
Other				

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	2	Radio Presentations	
Newspapers (P.R.'s sent to)	4	Exhibits	
TV Presentations		Est. Exhibit Viewers	

3-1756
(Rev. 4/63)

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1757
Form NR-7
(Rev. June 1960)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS (1)

Refuge Reelfoot & Lake Isom Year 19 67

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
NO COLLECTIONS OR PLANTINGS MADE													

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

76148

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

SUMMARY SHEET

CULTIVATED CROPS - HAYING - GRAZING

Refuge Reelfoot County Obion, Lake, and Fulton State Tennessee & Kentucky

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return Harvested		Government's Share or Return Unharvested		Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn	10.0	750 bu.	14.0	1,050 bu.	521.8	23,640 bu.	535.8	Wheat(browse)	494.9
Milo					47.0	940 bu.	47.0	Barley(browse)	161.2
Soybeans	1,117.9	35,530 bu.	2.1	66bu.			1,117.9	Ladino Clover(browse)	5.0
Wheat(1966 Planting)	45.0	1,700 bu.	15.0	570 bu.			60.0		
Barley(1966 Planting)	45.75	1,638 bu.	15.25	513 bu.			61.0		
Wheat(1967 Planting)					494.9	990 T.	494.9		
Barley(1967 Planting)					161.2	323 T.	161.2		
Jap Millet			5.0	2,200 lbs	16.0	12,800 lbs	21.0		
1/Oats(1966 Planting)							27.2		
Pasture							11.0		
Ladino Clover					5.0	10 T.	5.0		
								Fallow Ag. Land	42.1

1/Not harvested - yield did not justify.

No. of Permittees: Agricultural Operations 17 Haying Operations 0 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				1,767.3
Hay - Wild				2. Acreage Cultivated as Service Operation				525.2

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.-DUP. SEC., WASH., D.C. 91767

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Reelfoot County Obion State Tennessee

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn					81.20	6,090 bu.	81.20	Wheat(browse)	99.4
Milo					22.0	440 bu.	22.0	Barley(browse)	27.2
Soybeans	57.0	1,880 bu.					57.0	Ladino Clover(browse)	5.0
Wheat(1966 planting)	26.25	1,050 bu.	8.75	350 bu.			35.0		
Barley(1966 planting)	19.5	680 bu.	6.50	225 bu.			2 6.00		
Wheat(1967 planting)					99.4	200T.	99.4		
Barley(1967 planting)					27.2	5T.	27.2		
1/Oats(1966 planting)							27.2		
Jap Millet					1.0	800 lbs.	1.0		
Ladino Clover					5.0	10T.	5.0		
								Fallow Ag. Land	27.0

1/Not harvested - yield did not justify.

No. of Permittees: Agricultural Operations 8 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				283.9
Hay - Wild				2. Acreage Cultivated as Service Operation				139.7

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.-DUP. SEC., WASH., D.C. 91767

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Reelfoot County Fulton State Kentucky

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn	10.0	750 bu.	14.0	1,050 bu.	147.4	11,050 bu.	161.4	Wheat(browse)	370.5
Soybeans	697.7	22,050 bu.					697.7	Barley(browse)	134.0
Barley(1966 planting)	5.75	125 bu.	1.25	40 bu.			5.0		
Wheat(1967 planting)					370.5	641 T.	370.5		
Barley(1967 planting)					134.0	264 T.	134.0		
Jap Millet			5.0	2,200 lbs	15.0	12,000lbs	20.0		
Pasture							11.0		
								Fallow Ag. Land	0

No. of Permittees: Agricultural Operations 7 Haying Operations 0 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				987.4
Hay - Wild				2. Acreage Cultivated as Service Operation				385.5

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.-DUP. SEC., WASH., D.C. 91767

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Lake Isom County Lake State Tennessee

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn					93.2	6,500bu.	93.2	Wheat (browse)	25.0
Milo					25.0	500bu.	25.0		
Soybeans	361.2	11,200bu.	2.1	66 bu.			363.2		
Wheat(1966 Planting)	18.75	550 bu.	6.25	220 bu.			25.0		
Wheat(1967 Planting)					25.0	50T.			
Barley(1966 Planting)	22.5	733 bu.	7.5	248 bu.			30.0		
								Fallow Ag. Land	15.1

No. of Permittees: Agricultural Operations 5 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				486.5
Hay - Wild				2. Acreage Cultivated as Service Operation				0

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

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Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

INT.-DUP. SEC., WASH., D.C. 91767

3-1570
NR-88
(4/54)

REFUGE GRAIN REPORT

Refuge Reelfoot Months of January through December, 1967

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn	560 bu.	700 bu.	1,260 bu.			520 bu.	520 bu.	740 bu.		740 bu.	
Wheat	10 bu.	670 bu.	680 bu.		636 bu.		636 bu.	44 bu.		44 bu.	
Barley	190 bu.	450 bu.	640 bu.		430 bu.		430 bu.	210 bu.		210 bu.	
Jap Millet	1,400#	1,100 #	2,500 #		1,040 #		1,040 #	1,460 #	1,000#	460 #	
Soybeans		18 bu.	18 bu.					18 bu.		18 bu.	

(8) Indicate shipping or collection points

(9) Grain is stored at

(10) Remarks

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.–DUP. SEC., WASH., D.C. 17065

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Reelfoot and Lake Isom Year 1967

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From – To	Rate	Total Income	Remarks
NO GRAZING PERMITS IN EFFECT									

Totals:

Acreage grazed..... Animal use months..... Total income Grazing.....

Acreage cut for hay..... Tons of hay cut..... Total income Haying.....

3-1761
Form NR-11

TIMBER REMOVAL

Refuge Reelfoot Year 1967

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
West Kentucky Lumber Co. Hickman, Ky.	R.O. 190	Gum Arm North Reelfoot Unit	100	188,000 B.F.		$5200.00		Cottonwood Willow

Total acreage cut over 100 Total income $ 5200.00

No. of units removed B. F. 188,145 Method of slash disposal

Cords

Ties

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **1 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7/1-8/8	Various weeds Woody plants Vines & bushes	Fence rows, ditch banks, field and road edges.	21	Ammonium Sulfamate	225 lbs.	10 lbs. AI/A.	Water 20 gal/A	Ground equipment

10. Summary of results (continue on reverse side, if necessary)

Control effective on most plant species. No adverse effects on adjacent vegetation.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **2 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

10. Summary of results (continue on reverse side, if necessary)

Excessive rainfall prevented planned use of chemical.

(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge: Neelfoot

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number	Reporting Year
4 - 67	1967

INSTRUCTIONS: Wildlife Refuges Manual, secs, 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	~~Chemical(s)~~ Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

10. Summary of results (continue on reverse side, if necessary)

Pesticide not used. No army worm invasion occurred.

(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge: Reelfoot

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number	Reporting Year
E - 67	1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

10. Summary of results (continue on reverse side, if necessary)

Pesticide not used. No army worm invasion occurred.

(9/63) Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **6 - 67**

Reporting Year: **1967**

INSTRUCTIONS: wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
~~5/x~~ 4/1-6/10	Jimson weed Pigweed Coffee weed Morning glory Cocklebur	Reelfoot Refuge corn acreage	250	Atrazine	200 lbs.A/I	.8 lbs./A	Water 10 gal/A	Ground Equipment

10. Summary of results (continue on reverse side, if necessary)

Pre-merge operation. Costs borne by cooperative farmers. Cost data not available. Results mixed. Degree of success dependent upon soil types, soil moisture, temperature and seedbed condition. No apparent adverse effects.

(9/63) Bureau of Sport Fisheries and Wildlife

Refuge: R ealfoot

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number	Reporting Year
7 - 67	1967

INSTRUCTIONS: Wildlife Refuges Manual, secs, 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4/1-5/20	Jimson weed Pigweeds Coffeeweed Morning glory Cocklebur	Lake Iaem Refuge Corn acreage	93.2	Atrazine	74.5 lbs Al	.8 lbs. Al/A	Water 10 gal/A	Ground equipment

10. Summary of results (continue on reverse side, if necessary)

Same as 6 - 67.

(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge: **Reelfoot**

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number	Reporting Year
3 - 67	1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9/25-10/12	Giant Cutgrass	Reelfoot Lake	70	Dalapon	950 lbs.	11 lbs.AI/A	Water 50 gal/A	Boat Equipment

10. Summary of results (continue on reverse side, if necessary)

Cooperative venture with Tennessee Game and Fish Commission. Acreage reported includes both State and Bureau controlled waters. Initial results excellent. Final evaluation must be delayed until next growing season. No adverse effects noted.

Total cost $ 1,262.72, $ 18.04 per acre.

(9/63) Bureau of Sport Fisheries and Wildlife

Refuge **Reelfoot**

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number	Reporting Year
10 - 67	1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5/20-6/30	Morning glory Pigweeds Coffeeweeds Jimson weed Cocklebur Horse weed	Corn acreage Reelfoot Refuge	140	2,4-D, non-volatile	70 lbs.A.E./A	½ lb. A.E./A	Water 8 gal.	Ground Equipment

10. Summary of results (continue on reverse side, if necessary)

Approximately 90 acres treated. Results very favorable on 60% acreage treated. Fair results on remainder due to unfavorable weather conditions.

Total cost. $ 108.40 Cost rate , $ 1.00 peracre.

(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Red Rock

Proposal Number: 11 - 67

Reporting Year: 1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		NOT APPROVED						

10. Summary of results (continue on reverse side, if necessary)

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Reelfoot

Proposal Number: 12 - 67

Reporting Year: 1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	~~Chemical(s)~~ Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5/30- 7/15	Johnson grass	Reelfoot Farm Units 1,2,3	NA	Sodium chlorate	500 lbs.	NA	None	None

10. Summary of results (continue on reverse side, if necessary)

Spot treatment of light infested spots in cultivated fields. Adverse effects limited to sterilization of soil for 12 - 18 months.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **13 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4/20- 6/30	Various weeds Johnson grass (seedlings) Crab grass Nut grass	Reelfoot Refuge Soybean acreage	649	Triflourin	649 A/I	1 lb. AI/A	Water 20 gal/A	Ground equipment

10. Summary of results (continue on reverse side, if necessary)

Pre-merge operation with chemical incorporated with soil. Cost borne by cooperative farmer. Results mixed. More effective on grasses than broad-leaved weeds. No apparent adverse effects. Cost data not available.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **14 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4/20/-6/15	Various weeds Johnson grass (seedlings) Crab grass Nut grass	Lake Isom Refuge Soybean acreage	561	Triflourin	95 lb. A/I	1 lb. AI/A	Water 20 gal/A	Ground equipment

10. Summary of results (continue on reverse side, if necessary)

Pre-merge operation with chemical incorporated with soil. Cost borne by cooperative farmer. Results mixed. More effective on grasses than broad leaved weeds. No apparent adverse effects. Cost data not available.

(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **15 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4/25- 7/3	Jimson weed Cocklebur Horse weed Morning glory Pigweeds Coffee weed Crab grass Nut grass	Reelfoot Refuge Soybean acreage	310	NPA (Alanap)	620 lbs.A/I	2 lbs. AI/A	Water 15 gal/A	Ground Equipment

10. Summary of results (continue on reverse side, if necessary)

Pre-merge operation with cost borne by cooperative farmer. Cost data not available. Results mixed. Some good some poor. No adverse effects noted.

(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: **Reelfoot**

Proposal Number: **16 - 67**

Reporting Year: **1967**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		NO ALANAP USED AT LAKE ISOM						

10. Summary of results (continue on reverse side, if necessary)

(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Keelfoot

Proposal Number: 17 - 67

Reporting Year: 1967

INSTRUCTIONS: wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		NOT APPROVED						

10. Summary of results (continue on reverse side, if necessary)

3-1750
Form NR-1
(Rev. March 1950)

WATERFOWL

REFUGE Reelfoot

MONTHS OF January TO April, 1968

(1) Species	(2) Weeks of reporting period: 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	13,500	13,500	15,600	15,600	17,500	12,500	13,000	13,000	8,500	5,400
Cackling										
Brant										
White-fronted										
Snow	2			3	3	2			3	3
Blue				2	2				7	7
Other	30		30	30	30	20	20	20	15	10
Ducks:										
Mallard	40,000	41,250	19,000	9,000	4,500	750	650	700	300	175
Black	1,050	1,050	800	550	200	100	75	70	20	10
Gadwall	2,500	2,500	750	600	350	125	125	130	80	80
Baldpate	1,500	1,800	300	300	250	40	50	50	25	125
Pintail	900	975	250	250	175	115	100	100	70	50
Green-winged teal	600	650		30				40	30	15
Blue-winged teal										
Cinnamon teal										
Shoveler	250	300		25	25	20	20	20	35	115
Wood	1,500	1,650	850	850	775	550	550	600	650	650
Redhead	60	60								
Ring-necked	3,700	4,000	1,450	1,350	1,050	450	400	400	210	230
Canvasback	50	50								
Scaup	350	350	200	175	175	75	90	110	40	50
Goldeneye	20		5	10	10	10	15	10	5	
Bufflehead	15	15			5	10	10	10	5	
Ruddy										
Other	25	25								
COOT:	7,000	7,000	950	1,050	950	600	600	600	300	450

3-1750a.
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE: Realfoot MONTHS OF January TO April, 1968

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	475	18							881,951		
Cackling											
Brant											
White-fronted											
Snow									112		
Blue									126		
Other									1,645		
Ducks:											
Mallard	220	200	110	75	60	40	35	35	819,560		
Black	5	10							27,510		
Gadwall	75	120	80	25	10				52,850		
Baldpate	250	300	450	175	90	20	10		35,245		
Pintail	15								21,000		
Green-winged teal	5								9,485		
Blue-winged teal	10	650	1,100	1,400	850	725	550	375	33,120		
Cinnamon teal											
Shoveler	300	450	650	450	175	90	55	10	20,890		
Wood	700	725	750	800	900	800	800	800	100,400		
Redhead									840		
Ring-necked	350	450	500	225	150	15			107,205		
Canvasback									200		
Scaup	75	250	325	175	90	30	15		17,965		
Goldeneye									595		
Bufflehead									490		
Ruddy					10	5	5		140		
Other			10	5	5	5	5	5	585		
Coot:	950	2,600	3,700	2,800	2,600	1,950	1,150	1,000	249,750		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	881,951	17,500	
Ducks	1,253,580	53,975	
Coots	249,750	7,000	

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by John L. DeLine

John L. DeLine, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750
Form MB-1
(Rev. March 1953)

WATERFOWL

REFUGE Lake Isom MONTHS OF January TO April, 1968

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	300	300	300	1,050	2,300	2,100	2,250	2,150	850	450
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	18,000	18,000	11,000	14,000	12,000	7,500	3,100	2,800	400	125
Black	400	400	250	600	550	350	155	110	25	5
Gadwall	30	30	10	25	20	10	10	10	5	10
Baldpate	5	5		20	10	5	5			15
Pintail	20	20	15	45	30	20	15	15	10	
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler	10	10							10	35
Wood	750	750	600	600	450	325	325	350	400	400
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
COOT:	10	10								225

3-1750a·
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE: Lake Isom — MONTHS OF January TO April, 1968

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	80	14							84,980		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	110	35	10						609,560		
Black	5								19,950		
Gadwall	15	10	5	5					1,365		
Baldpate	35	65	60	20	10				1,785		
Pintail									1,330		
Green-winged teal											
Blue-winged teal		120	175	225	75	40	5	10	4,510		
Cinnamon teal											
Shoveler	60	75	70	35	5	5			2,205		
Wood	325	300	275	250	225	200	175	175	47,425		
Redhead											
Ring-necked											
Canvasback											
Scaup	45								315		
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:	40	60	30	25	25	20	10		3,135		

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	84,980	2,300	
Ducks	688,445	19,215	
Coots	3,185	225	

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by John J. DeLima

John J. DeLima, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Reelfoot Months of January to April 19 68

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
Common Egret	1	3/6	175	4/20-4/30	Present		1			5,300
Great Blue Heron	Present		24	4/20-4/30	"		1			1,800
Little Blue Heron	2	4/8	16	4/20-4/30	"					260
Double-crested Cormorant	1	3/3	9	3/25	2	4/2				145
Pied-billed Grebe	1	2/28	90	4/10	5	4/23				710
Little Green Heron	1	4/8	15	4/29	Present					175
Common Gallinule	1	4/8	30	4/29	"					350
Purple Gallinule	1	4/29	15	4/29	"					120
Coot	1	4/8	170	4/15-4/30	"					850
I. Shorebirds, Gulls, and Terns:										
Gull, Herring	Present		17	2/10-4/15	2	4/29				900
Gull, Ring-billed	"		35	2/10-3/14	3	4/29				1,600
Wilson Snipe	1	3/13	170	4/2-12	2	4/26				3,200
Lesser yellow-legs	2	4/3	115	4/10-4/25	Present					2,700

(over)

(1)	(2)	(3)		(4)	(5)	(6)
II. Doves and Pigeons:						
Mourning dove	Present	85	3/20-4/30	Present		5,800
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl	Present	6	2/10-4/30	Present	2	1,000
Magpie						
Raven						
Crow	Present	600	2/15-4/30	Present		46,000

Reported by John L. Pedine, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen. The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Lake Isom Months of January to April 1968

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	1	3/6	11	4/12-4/25	3	4/26				200
Great Blue Heron	Present		8	2/15-2/25	1	4/26				100
Little Green Heron	1	4/9	2	4/28	Present					30
Black-crowned night Heron	1	4/2	2	4/6	2	4/6				10
I. Shorebirds, Gulls, and Terns:										

(over)

(1)	(2)		(3)		(4)	(5)	(6)
II. Doves and Pigeons:							
Mourning dove	Present		140	1/10	Present		3,800
White-winged dove							
IV. Predaceous Birds:							
Golden eagle							
Duck hawk							
Horned owl	Present		4	3/10-4/30	Present	1	270
Magpie							
Raven							
Crow	400	1/10	400	1/10	Present		17,500

Reported by John L. DeLime, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1752
(Form NR-2)
(April 1946)

UNITED GAME BIRDS

Refuge Reelfoot & Lake Isom Months of January to April, 1968

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Reelfoot										
Bob-white Quail	1,225 acres farmland - 900 acres bottomland swamp timber	85.0							25	
Wild Turkey	1,346 acres bottom land swamp timber 70 acres cropland	283.2							5	
Lake Isom										
Bob-white Quail	446 acres cropland 634 acres bottomland swamp timber	77.1							14	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1754
Form NR-4,
(June 1945)

SMALL MAMMALS

Refuge Peelfoot Year ending April 30, 1968

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Muskrat	4,600	.8												5,600
Mink	10,540	52.7												200
Fox	2,640	176.0												15
Beaver	4,680	156.0												30
Raccoon	7,700	7.3												1,050
Opposcum	2,640	66.0												40
Skunk	1,900	76.0												25
Fox Squirrel	5,300	3.5												1,500
Gray Squirrel	5,300	10.3												490
Rabbit, Cottontail	4,300	20.0												185
Rabbit, Swamp	3,500	35.0												100

* List removals by Predator Animal Hunter

REMARKS:

Reported by John L. DeLine, Refuge Manager

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Lake Isom Year ending April 30, 1968

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Muskrat	800	4.0												200
Mink	1,300	43.3												30
Fox	1,000	333.3												3
Beaver	600	30.0												20
Raccoon	1,700	6.8												250
Opposum	1,700	170.0												10
Skunk	650	325.0												2
Fox Squirrel	750	3.1												240
Gray Squirrel	750	[illegible]												45
Rabbit, Cottontail	1,000	[illegible]												30
Rabbit, Swamp	700	[illegible]												25

* List removals by Predator Animal Hunter

REMARKS:

Reported by John L. Peline, Refuge Manager

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-175Q
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Redfoot MONTHS OF [illegible] TO August, 19 60

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	45	55	60	65	65	65	66	65	60	60
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal	110	35	8	3						
Cinnamon teal										
Shoveler	4	1	3	1						
Wood	1,050	1,100	1,250	1,300	1,400	1,500	1,700	1,750	1,850	1,200
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other M. Merganser	15	20	22	22	22	20	20	15	15	10
Coot	740	510	200	175	95	110	120	115	120	120

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE _____ MONTHS OF _____ TO _____, 19__

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Black											
Gadwall											
Baldpate											
Pintail						[illegible]	[illegible]	[illegible]	[illegible]		
Green-winged teal											
Blue-winged teal					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Cinnamon teal											
Shoveler									[illegible]		
Wood	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Coot:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	241,122	3,925	1,411
Coots	16,320	72[illegible]	35

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by John L. Peters

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1750.
Form NR-1.
(Rev. March 1953)

WATERFOWL

REFUGE _____ MONTHS OF _____ TO _____, 19__

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal	[illegible]	[illegible]	[illegible]							
Cinnamon teal										
Shoveler										
Wood	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE _____ MONTHS OF _____ TO _____, 19__

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard											
Black											
Gadwall											
Baldpate											
Pintail											
Green-winged teal											
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:											

(Over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	3,344	112	
Coots			

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by John L. LeFevre, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species — In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: — Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: — Average weekly populations x number of days present for each species.

(4) Production: — Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: — A summary of data recorded under (3).

(6) Peak Number: — Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: — A summary of data recorded under (4).

3-1751.
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Medicine Lake Months of May to August 1963

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	120	5/1	120	5/1	2	8/20				3,100
Great Blue Heron	24	5/1	24	5/1	12	8/20	1	6	9	3,000
Little Blue Heron	16	5/1	21	7/10-8/3	Present					1,400
Yellow-crowned Night Heron	3	5/1	6	6/24	1	8/20				140
Cattle Egret	6	5/8	7	6/13	6	8/13				90
Least Bittern	Present		35	7/1-8/26	Present			12	20	3,300
Common Gallinule	Present		50	7/1-8/20	Present			17	31	4,300
Purple Gallinule	Present		40	7/1-8/20	Present			11	21	3,000
Little Green Heron	Present		30	7/1-8/20	Present			9	14	1,700
II. Shorebirds, Gulls, and Terns:										
Gull, Herring	1	5/3	5	8/20	Present					55
Least Tern	1	7/11	275	8/13	10	8/20				2,200
Black Tern	3	7/9	115	7/15	1	8/27				1,100
Lesser Yellow-leg	1	8/1	7	8/20-8/31	Present					1,000

(over)

(1)	(2)	(3)		(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove	Present	130	5/10-30	Present	65	12,000
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl	Present	6	5/1-8/30	Present		1,100
Magpie						
Raven						
Crow	Present	230	7/15-8/30	Present		25,000

Reported by John L. DeLine, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge [illegible] Months of [illegible] to [illegible] 19[illegible]

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. Water and Marsh Birds:										
American Egret	Present		7	[illegible]	Present					[illegible]
Great Blue Heron	"		5	[illegible]						700
Little Blue Heron	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]
Little Green Heron	Present		5	[illegible]	5	[illegible]		1	[illegible]	[illegible]
Least Bittern	1	[illegible]	2	6/1[illegible]	1	[illegible]				[illegible]
I. Shorebirds, Gulls, and Terns:										

(over)

(1)	(2)	(3)		(4)	(5)	(6)
II. Doves and Pigeons:						
Mourning dove	Present	90	3/1-[illegible]/30	Present	45	9,000
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl	Present	2	5/1 - [illegible]/30	Present		240
Magpie						
Raven						
Crow	Present	45	7/10-[illegible]/30	Present		5,000

Reported by John L. Pe[illegible], Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge [illegible] For 12-month period ending August 31, 19[illegible]

Reported by [illegible] Title [illegible]

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage		(3) Use-days	(4) Breeding Population	(5) Production
	Crops	[illegible]	Ducks	[illegible]		
	Upland		Geese	[illegible]		
	Marsh	[illegible]	Swans			
	Water	[illegible]	Coots	[illegible]		
	Total	[illegible]	Total	[illegible]		
	Crops	[illegible]	Ducks	[illegible]		
	Upland		Geese	[illegible]		
	Marsh	[illegible]	Swans			
	Water	[illegible]	Coots	[illegible]		
	Total	[illegible]	Total	[illegible]		
	Crops	[illegible]	Ducks	[illegible]		
	Upland	[illegible]	Geese	[illegible]		
	Marsh	[illegible]	Swans			
	Water	[illegible]	Coots	[illegible]		
	Total	[illegible]	Total	[illegible]		
	Crops	[illegible]	Ducks	[illegible]		
	Upland	[illegible]	Geese	[illegible]		
	Marsh	[illegible]	Swans			
	Water	[illegible]	Coots	[illegible]		
	Total	[illegible]	Total	[illegible]		
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
(Form NR-2)
(April 1946)

UPLAND GAME BIRDS

Refuge [illegible] Months of [illegible] to [illegible], 19 68

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
[illegible]T										
Bob-white Quail	1,225 ac farmland [illegible] ac bottomland timber	53.[illegible]	[illegible]	1[illegible]					[illegible]	
Wild Turkey	1,225 acres farmland 1,[illegible] ac bottomland timber	1,[illegible]	0	[illegible]					3	
[illegible]										
Bobwhite Quail	[illegible]46 ac farmland [illegible] ac bottomland timber	[illegible]	2	12					31	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

OPTIONAL FORM NO. 10
5010-104

UNITED STATES GOVERNMENT

Memorandum

TO : Regional Director, Atlanta, Georgia DATE: July 17, 1968

FROM : Refuge Manager, Reelfoot Refuge

SUBJECT: Monthly Activity Report

1. Weather. Temperatures and rainfall average near norral for period. Drought conditions were alovicted early in the period. All crops have rade excellent growth and prospects look good.

2. Personnel. Mr. James Keener, Biological Technician (Wildlife), reported for summer duty.

3. Wildlife Uses. Reelfoot wood duck continue to display unusual nesting behavior. Their preference for boxes erected in areas with heavy public use is beyond comprehension. Late nesting is also high. Of 10 boxes inspected early in July eight were occupied. Seven had produced previous broods. A good hatch is indicated. Observed brood size is well above average.

4. Maintenance and Development. The refuge road system was further improved with 811 tons of gravel.

All timber areas at Lake Isom were cruised and results recorded. Forester Clyde Stewart is conducting the cruise, along with refuge personnel.

Weather has been favorable for weed control and land leveling operations.

5. Other. Mrs. Jan Taylor, Special Correspondent, Memphis Commercial Appeal, visited the refuge to discuss opportunities for several feature articles.

Mr. Claudie Denton, Washington Office and Mr. Don Mankla & sons, Atlanta Office, visited the office during reporting period.

John L. DeLime

OPTIONAL FORM NO. 10
5010-104

UNITED STATES GOVERNMENT

Memorandum

TO : Regional Director, Atlanta, Georgia DATE: July 22, 1968

FROM : Wildlife Biologist, Samburg, Tennessee

SUBJECT: Monthly Activity Report

This period was featured by the usual semi-annual reports, the preparation of crop utilization study outlines, trips to Cross Creeks and Tennessee refuges, and duck stomach analysis data.

A trip was made to Cross Creeks Refuge June 18, primarily to make plans for a crop utilization study. Because of high water, the agricultural operations had been delayed, so the preparation of the study outline was held up for several weeks. However, at that time, Mr. Ryan showed me some interesting possibilities for development of pond areas on that refuge. A return trip was made to Cross Creeks July 16, the study fields were decided upon and the study outline has been prepared.

Visits were made to Tennessee Refuge June 19 and July 17 regarding a crop utilization study on that refuge. Preparation of a study outline for this work is being suspended awaiting an appraisal of job priorities. Mr. Childs pointed out that if this work is done, some other refuge program will have to be abandoned.

With the help of Mr. DeLime, the fields for the crop utilization study have been selected and the study outline has been prepared and submitted. This is for the study to be made on Reelfoot refuge.

Four 1/10 milacre crop samplers were made for use in crop utilization studies.

June 21 and 22 I assisted in the summer bird count, a project of the Wildlife Research Center, Patuxent.

July 10, I met at Reelfoot Refuge with an Ecology class from Murray State University and gave a brief talk about Reelfoot Lake. Game Management Agent Dave Hall was on hand and he displayed his cannons and nets and explained to the class how they worked and the reasons for trapping waterfowl.

July 11, I accompanied Mr. George Bryce, University of Tennessee, on a trip on Reelfoot Lake for a plankton study.

I attended safety meeting at Reelfoot headquarters July 19.

Annual leave was taken June 21, July2, July 5 and July 8.

Eugene Cypert